

Education

- Ph.D. **Public Policy**, LBJ School of Public Affairs, The University of Texas at Austin
Concentration: Energy & Technology Policy
- P.M. **DoD Program Management**, Defense Systems Management University, Fort Belvoir, VA
Certification: Senior Acquisition Professional, Level III
- M.S. **Physics**, Naval Postgraduate School, Monterey, California
Concentration: Electro-Optics, Electro-Magnetics, High-Voltage/Current Systems
- B.S. **Chemistry**, University of Oklahoma, Norman, Oklahoma
Concentration: Oil extraction from Oil Shale
Minor: Nuclear Engineering

Professional Experience

Energy Institute, The University of Texas at Austin Jun 2013 - Present

- Assistant Director for Policy Studies
- Responsible for supervising and conducting research and studies related to the interplay between the development of Energy Policy, Environmental Policy, and Technology Policy.
- Teaching Energy & Technology Policy in the Cockrell School of Engineering and International Energy Policy, and Energy Technology & Finance in the McCombs Business School.

Center for International Energy and Environmental Policy, The University of Texas at Austin Sept 2010 – May 2013

- Researching DoD Energy Policy and Acquisition Strategies.
- Developing a National roadmap for expanded use of natural gas in residential and commercial applications, heavy-duty vehicles and electricity generation.
- Lecturer in National & International Energy Policy.
- Designed, procured and installed 30 kW (research/educational) & 196 kW solar photovoltaic systems on the UT Austin campus.
- Formulated a plan for the displacement of 4,000MW of coal-fired generation in Texas with natural gas.

Georgetown Municipal Utility Board, Georgetown, TX Feb 2008 – Feb 2012

- Chair/CoChair of Municipal Utility.
- Developed and helped lead transition from dependence on a single large electricity provider to a wholly independent municipal utility with a diverse generation portfolio heavily invested in renewable energy sources.
- Directed and led the development of Green and Renewable Energy programs for Industrial, Commercial and Residential customers.

LBJ School of Public Affairs, The University of Texas at Austin

Aug 2006 - May 2010

- Conducted research in energy and technology policy specifically related to electricity generation, transmission and storage.
- Created analytical models to calculate “Total Cost of Fuel” and “Carbon Footprint” of U.S. global military operations. Evaluated DoD Energy Policy compliance and Green Energy Policies / Practices.
- Researched trends and causal factors in DoD Technology Development and Systems Acquisition during the early, late and post Cold War periods. Qualitative analysis of growth in acquisition costs and schedules.

Institute for Advanced Technology, The University of Texas at Austin

Aug 2005 - May 2010

- Developed and directed two, \$30 million electrical energy generation, transmission, and storage prototype efforts for the Office of Naval Research.
- Managed a nation wide team of National Lab scientists and engineers in conducting classified technical and performance reviews of prototype systems.
- Originated advanced energy concepts and conducted original research in operational concepts, employment strategies, life cycle costs, and supporting industrial technology base.

Naval Sea Systems Command, Washington Naval Yard, D.C.

Nov 2002 - July 2005

- Chartered and “Stood-Up” the Electric Weapons Program Office (PMS-405). Established Research & Development programs in “Directed Energy Weapons,” “All Electric Ship,” and “Ship Hybrid Drive Topology.”
- Created and ran the Foreign Technology Exchange program for Electric and Directed Energy (NATO & ANZUS).
- Initiated and led the Navy’s first Innovative Naval Prototype program (\$230 million, five year, research program).

Surface Warfare Directorate (N76), Pentagon, Alexandria, VA.

June 2000 - Oct 2002

- Director of Technical and Operational Evaluation for ACAT I acquisition programs (DD-21, DD(X), Tactical Tomahawk).
- Requirements Officer for Surface Combatants and Weapon Systems (Littoral Combat Ship, Standard SM-3).
- Test and Evaluation Officer for Single Integrated Air Picture (SIAP) and Cooperative Engagement Concept (CEC).
- U.S. Navy Representative to White House, Office of Science and Technology Policy, Action Group for Critical Infrastructure Protection. Participated in the development and implementation of protection and assurance plans for National Energy and IT systems and assets.

Naval Surface Warfare Center, Dahlgren, VA

Jan 1998 - May 2000

- Managed the Navy’s largest Research and Development Laboratory. Over 2,000 Federal employees and contractors with a \$300 million annual budget. Developed and implemented smart grid and energy surety plans.
- Program Manager for Naval Land Based Test Infrastructure. Developed

and implemented a nation-wide network to connect all Naval Warfare Center test and development sites to enable live/real time (secure) integration and testing of land based and fleet systems.

- Developed, organized and led the U.S. Navy's Global Y2K evaluation, remediation, test, and certification program. Led a team of 500 technical specialists in at-sea, operational, testing of five Aircraft Carrier Battle Groups deployed worldwide.

Teaching through Fall 2015

- Energy Technology & Policy, Cockrell School of Engineering,
- International Energy, Global Connections China, McCombs Business School
- Energy Technologies & Energy Finance, McCombs Business School

Selected Papers & Publications

- F. Beach, J. Rhodes, et al., "A geographically-resolved method to estimate levelized power plant costs with environmental externalities" under review, Environmental Research Letters, Fall 2015
- F. Beach "Why is the U.S. so insecure about it's energy Security?" Earth Magazine, April 2013.
- F. Beach and M. Webber "An Analysis of the Potential for Expanded Use of Natural Gas in the U.S. Residential Sector" The University of Texas at Austin, Oct 15, 2012.
- E. Grubert, F. Beach, and M. Webber "Can switching fuels save water? A life cycle quantification of freshwater consumption for Texas coal-and natural gas-fired electricity", Environmental Research Letters, Volume 7, Number 4, Oct 2012.
- F. Beach "Natural Gas Use In Residential Buildings" Center for Climate and Energy Solutions, October 2012.
- F. Beach "Natural Gas Use In The Transportation Sector" Center for Climate and Energy Solutions, May 2012.
- F. Beach, M. Shivers, J. Butler, and M. Webber "An Analysis of the Potential for Expanded Use of Natural Gas in Electric Power Generation, Transportation, and Direct Use: Texas as a Case Study" The University of Texas at Austin, March 17, 2012.

Consultancy

- Defense Advanced Research Projects Agency 2003 - Present
- MITRE (JASON's)
- Defense Science Board
- Naval Research Advisory Council

- Chief of Naval Operations, Strategic Studies Group
- Naval Research Lab

Practical Experience

Defense Acquisition Professional

1998 - 2003

- Naval Surface Warfare Directorate, N76, Pentagon, Alexandria, VA.
- DD-21 Program Office, Naval Sea Systems Command, Washington Naval Yard, Washington DC.
- Deputy Director, Naval Surface Warfare Center, Dahlgren, VA.

Naval Surface Warfare Officer

1988 - 1997

- Executive Officer, USS Lewis B. Puller, FFG-23
- Combat Systems Officer, USS Arkansas, CGN-41
- Weapons Officer, USS Lockwood, FF-1064
- Navigator & Electrical Officer, USS Ponce, LPD-15

Naval Aviator

1982 - 1987

- Fighter/Attack Squadron VFA-82, F/A-18C Hornets
Aboard USS America CV-66
- Light Attack Squadron VA-82, A-7E Corsair
Aboard USS Nimitz CVN-68

Naval Submariner

1979 - 1981

- USS Ethan Allen, SSBN- 608
- USS Patrick Henry, SSBN-599

Professional Certifications

- Designated, U.S. Navy Technology Project Officer and Foreign Technology Officer for Electric and Directed Energy Weapons.
- Department of Defense, Senior Acquisition Professional in Program Management.
- Certified, U.S. Navy Specialist, Combat Systems Science and Technology.
- Certified 600 PSI Steam Plant Operator
- Certified 1200 PSI Steam Plant Operator
- Certified LM2500 Gas Turbine Power Plant Operator
- Certified S5W PWR Reactor Plant Operator
- Cleared TS/SCI, SSBI June 2009

Professional Service and Memberships

- Member Georgetown Utility Board 2008 - 2012
- Technical Review Committee, International EML Symposium 2001 - Present
- American Association for the Advancement of Science
- American Society of Naval Engineers
- U.S Naval Institute
- Directed Energy Professional Society
- Electro-Magnetic Launch Association
- U.S. Navy League